

REMARKS

I. STATUS OF THE CLAIMS

Claims 21-24 are canceled.

New claim 25 is added.

In view of the above, it is respectfully submitted that claims 1-20 and 25 are currently pending.

II. OBJECTION UNDER 35 USC 132, REJECTION UNDER 35 USC 112, CLAIM OBJECTION

Claim 1 is amended to recite *a collimator collimating a wavelength multiplexed light* including a plurality of different wavelengths multiplexed together and which has *a single-peaked beam profile*. Similar amendments are made to the other independent claims.

See, for example, collimating lens 102a in FIGS. 1, 3, 5 and 6A-6C.

See also the single-peaked beam profile 110A shown in FIGS. 1 and 2A. As indicated in MPEP 2163 II(A)(3), "an applicant may show possession of an invention by disclosure or drawings ... that are sufficiently detailed to show that the applicant was in possession of the claimed invention as a whole". MPEP 2163 II(A)(3) cites the following language from various cases: "drawings alone may provide a 'written description' of an invention as required by Sec. 112"; "the drawings of applicant's specification provided sufficient written descriptive support for the claim limitation at issue"; "in those instances where a visual representation can flesh out words, drawings may be used in the same manner and with the same limitations as the specification".

The Examiner asserts that the phrase "the collimated beam" in claim 6 is unclear. It is respectfully submitted that the Examiner's comments appear to be in error, as claim 6 does not recite "the collimated beam".

Moreover, the Examiner asserts that claim 6 lacks proper structure relationship between recites features. However, upon further review, it is respectfully submitted that claim 6 is clear. Please note that claim 6 can be understood from FIG. 6C and the corresponding disclosure on page 16, lines 15-25, of the specification. Further, to address the Examiner's concerns, claim 6 is amended herein to recite that the first and second diffraction units are arranged in the path of the collimated wavelength multiplexed light.

In view of the above, it is respectfully submitted that the rejections and objection are overcome.

III. REJECTION OF CLAIMS 1-9 AND 11-24 UNDER 35 USC 103 AS BEING UNPATENTABLE OVER FUKUSHIMA (US PATENT NO. 5,805,759)

Claim 1 is amended to recite a collimator collimating a wavelength multiplexed light including a plurality of different wavelengths multiplexed together and which has a single-peaked beam profile. See, for example, collimating lens 102a in FIGS. 1, 3, 5 and 6A-6C. See also the single-peaked beam profile 110A in FIGS. 1 and 2A.

Claim 1 also recites a filter that is arranged in a path of the collimated wavelength multiplexed light.

Moreover, claim 1 recites the filter having a diffraction unit that is movable in a direction substantially perpendicular to a direction of the wavelength multiplexed light, wherein the filter has first and second filter portions with the diffraction unit between the first and second filter portions, and the wavelength multiplexed light hits the first and second filter portions and the diffraction unit so that diffraction loss of the wavelength multiplexed light incident on the diffraction unit varies as the diffraction unit is moved and the filter thereby provides a transmittance versus wavelength characteristic in which transmittance of the filter changes with wavelength.

Claim 1 also recites a moving unit that moves the diffraction unit to thereby change the transmittance versus wavelength characteristic of the filter.

See, for example, FIGS. 2A and 2B, and the disclosure on page 5, lines 24-25, and page 6, line 24, through page 7, line 21, of the specification.

The transmission slit 42 in FIGS. 7(C) and 7(D) of Fukushima does not operate in the same manner as the diffraction unit recited in claim 1. More specifically, in Fukushima, a spectral beam is a beam in which wavelength components are separated spatially in a direction of thickness of the spectral beam. See, for example, column 5, lines 13-17, of Fukushima. As shown, for example, in FIG. 4 of Fukushima, diffraction gratings 20 and 22 are used to create a spectral beam in which wavelength components are separated spatially in a direction of thickness of the spectral beam. **Therefore, gratings 20 and 22 essentially operate to demultiplex the wavelengths in the light received by grating 20.**

The filter, such as attenuator plate 6D in FIG. 7(C) of Fukushima, is displaced with respect to the spatially separated wavelength components. In other words, in Fukushima, *the wavelength of the beam to be filtered varies* as the attenuator plate 6D is moved, thereby achieving a variable wavelength characteristic.

Moreover, as indicated in column 9, lines 35-43, of Fukushima, the transmittance on portions of attenuator plate 6D other than the transmission slit 42 have 0% transmittance. Therefore, *the transmission slit 42 only functions as a window that transmits 100% (in principle) of the spectral beam.*

From the above description of Fukushima, it can be seen that the light hitting the attenuator plate 6D of Fukushima is NOT a collimated wavelength multiplexed light including a plurality of different wavelengths multiplexed together. Instead, in Fukushima, a beam is separated into respective wavelength components by diffraction gratings 20 and 22 before interacting with attenuator plate 6D. Therefore, gratings 20 and 22 essentially operate to demultiplex the wavelengths in the light received by grating 20. See, for example, column 5, lines 13-17, of Fukushima.

Moreover, the light hitting attenuator plate 6D of Fukushima does NOT have a single-peaked beam profile.

Therefore, Fukushima does not disclose or suggest the features are recited in the amended claim 1.

Moreover, please note that claim 1 recites that diffraction loss of the wavelength multiplexed light incident on the diffraction unit varies as the diffraction unit is moved and the filter thereby provides a transmittance versus wavelength characteristic in which transmittance of the filter changes with wavelength. This does not happen in Fukushima as long as the diffraction gratings 20 and 22 are used in Fukushima. Further, it is not possible to remove the diffraction gratings 20 and 22 in Fukushima, as removal of the diffraction gratings would lose all the transmission versus wavelength characteristics shown, for example, in FIGS. 5(B), 5(D), 5(F), 6(B), 6(D), 6(F), 7(B), 7(D) and 7(F) of Fukushima.

The above comments are specifically directed to claim 1. However, it is respectfully submitted that the comments are helpful in understanding differences of the other claims over Fukushima.

* * *

Claim 17 recites that the first and second filter portions each have a same, non-zero transmittance versus wavelength characteristic over wavelengths in the collimated light. See also claims 18-20. See, for example, FIG. 2, and the disclosure on page 6, lines 3-5; page 6, lines 22-23; and column 18, lines 12-17, of the present application.

FIG. 7(C) of Fukushima discloses an attenuator plate 6D. The transmittance versus wavelength characteristics of attenuator plate 6D are shown in FIG. 7(D) of Fukushima. As can be seen in FIG. 7(D) of Fukushima, the portions adjacent to slit 42 have zero transmittance for wavelengths in the light. Therefore, the attenuator plate 6D in Fukushima is significantly different that that recited, for example, in claims 17-20.

In the Office Action, the Examiner rejects claims 17-20 by referring to FIGS. 7(A) and 7(B) of Fukushima. However, it is respectfully submitted that these figures are substantially opposite to what is recited in claims 17-20.

More specifically, FIG. 7(A) of Fukushima shows a blocking stripe 40 in the center of

attenuator plate 6c. Therefore, in essence, the blocking stripe 40 is positioned between two transparent areas. This is substantially opposite that recited, for example, in claim 17 (which is dependent from claim 1), where the diffraction unit is *between* the first and second filter portions.

Please note that claim 20 is dependent from claim 13, which specifically recites a slit between the first and second film portions. The arrangement in FIGS. 7(A) and 7(B) of Fukushima is substantially opposite the recitation in claim 20.

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In view of the above, it is respectfully submitted that the rejection is overcome.

IV. REJECTION OF CLAIM 10 UNDER 35 USC 103 AS BEING UNPATENTABLE OVER FUKUSHIMA IN VIEW OF MATSUNO

The above comments for distinguishing over Fukushima also apply here, where appropriate.

In view of the above, it is respectfully submitted that the rejection is overcome.

V. DOUBLE PATENTING

The Examiner asserts that claims 11 and 12 are substantially duplicates of claim 1. It is respectfully submitted that the Examiner is incorrect.

Please note that claim 11 recites an "optical amplifier". Claim 1 does not include this recitation.

Claim 12 recites a moving unit that moves the diffraction unit of the filter to a predetermined position between a center and an edge of the wavelength multiplexed light. Claim 1 does not include this recitation.

In view of the above, it is respectfully requested that the double patenting rejection be withdrawn.

VI. CONCLUSION

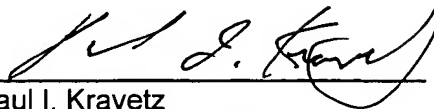
In view of the above, it is respectfully submitted that the application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

If any further fees are required in connection with the filing of this response, please charge such fees to our Deposit Account No. 19-3935.

Respectfully submitted,

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